REMARKS

This paper is responsive to a Final Office Action dated October 28, 2005. Claims 26-49 were examined. Claim 29 has been amended to correct a typographical error. Claim 39 has been amended to clarify A1, A2, S1, and S2. Claim 38 has been amended to cure an antecedent basis error. Claim 46 has been amended to correct a typographical error.

Preliminary matter

Blaukopf allegedly mediates communication between applications written in different codes. The claimed subject matter allows isolation of native code while maintaining transparency and independence between the native code and safe language code, thus facilitating fault isolation, resource management, etc. Blaukopf fails to address isolating native code in a mixed language program, and can still suffer from problems such as resource contention between a safe language application and a native code application. In addition, pervasive throughout the rejections is the extraction and application of portions of a reference out of context. The Office cannot cite to a section of reference, and imbue the section with new meaning that ignores the context of that section and lacks any support from surrounding text.

Moreover, the Office engages in the A+B+C type obviousness rejection warned against in Ruiz v. A.B. Chance Co. In making an assessment of differences between the prior art and the claimed subject matter, section 103 specifically requires consideration of the claimed invention "as a whole." Ruiz v. A.B. Chance Co., 357 F.3d 1270, 1275, 69 U.S.P.Q.2d (BNA) 1686, 1690 (Fed. Cir. 2004). Inventions typically are new combinations of existing principles or features. Envtl. Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 698, 218 U.S.P.Q. (BNA) 865 (Fed. Cir. 1983) (noting that "virtually all [inventions] are combinations of old elements"). The "as a whole" instruction in title 35 prevents evaluation of the invention part by part. Ruiz, 357 F.3d at 1275, 69 U.S.P.Q.2d at 1690. Without this important requirement, an obviousness assessment might successfully break an invention into its component parts, then find a prior art reference corresponding to each component. This line of reasoning would import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components. Further, this improper method would discount the value of combining various existing features or principles in a new way to achieve a new result—often the essence of invention. Id.

35 U.S.C. 103(a) Rejections

Rejections with Blaukopf in view of Holmberg

Claims 33-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blaukopf et al., U.S. Patent Application Publication 2002/0095521, in view of Holmberg et al., U.S. Patent No. 6,345,351. Applicant traverses these rejections at least because 1) the references do not disclose or suggest all limitations of the claims and 2) the Office has failed to support the obviousness rejections with a showing of a suggestion or motivation to modify the references as done by the Office.

Failure to establish a *prima facie* case of obviousness

Independent claim 33

The Office fails to establish a *prima facie* case of obviousness, and fails to show motivation or suggestion for combining Blaukopf with Holmberg. "To reject claims in an application under section 103, an examiner must show an unrebutted *prima facie* case of obviousness." In re Rouffet, 149 F.3d 1350, 47 U.S.P.Q.2d (BNA) 1453 (Fed. Cir 1998). It must be shown that all limitations of the claims are taught or suggested by the references as combined or modified to establish this *prima facie* case of obviousness. *See* In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974).

With respect to claim 33, the Office has failed to show that the references disclose or suggest "`maintaining analogous memory address ranges between the first and second processes...wherein the address ranges in the first process and the analogous address ranges in the second process are mapped to same portions of the one or more physical memory spaces....`" The Office refers to Blaukopf's disclosure of memory buffers for each communication stream, which are used by a second application to make function calls to a first application. *See* paragraph [0025]. **These buffers are for the TCP/IP streams used by the system thread executing the second application.** *See* paragraphs [0019] and [0025]. Blaukopf states that "[e]ach stream connection has its own memory buffers." Blaukopf discloses opening a stream connection by binding a TCP/IP socket, which has previously been bound to an event port (first TCP/IP port), to a command port (second TCP/IP

port). *See* paragraphs [0021] – [0026]. **The disclosure of memory buffers for stream connections does not disclose or suggest analogous buffers being maintained in different processes. Blaukopf does not disclose or suggest memory buffers being maintained in the second application and analogous memory buffers being maintained in the first application.**

The Office also asserts that Blaukopf discloses analogous memory ranges being mapped to a common physical memory area. However, Blaukopf does not support the assertion by the Office. **Again, the Office has nothing more than Blaukopf's statement that "[e]ach stream connection has its own memory buffers."** As stated above, there is no disclosure or suggestion in Blaukopf that analogous memory buffers are maintained in different processes. **Furthermore, there is no disclosure or suggestion in Blaukopf that memory buffers in different processes are mapped to same portions of one or more physical memory spaces. Blaukopf does not disclose or suggest how the buffers are mapped.** The Office also refers to Holmberg. Holmberg discloses virtual pages of different jobs being mapped to a same physical page. **However, Holmberg does not disclose or suggest these jobs as being different processes and does not disclose or suggest the jobs being written in a safe language and a native code.** Neither Blaukopf nor Holmberg disclose or suggest the above limitations of claim 33. Since the references do not teach or suggest all limitations of claim 33, the Office has failed to establish a *prima facie* case of obviousness. Therefore, Applicant respectfully requests that the rejection be withdrawn.

Dependent Claims

For many of the rejections of the dependent claims, the Office assumes that limitations are disclosed by the references despite their complete absence from the references. Without showing that all limitations of the claims are disclosed or suggested by the references, the Office cannot establish a *prima facie* case of obviousness.

The Office rejects claim 34 with reference to Holmberg. The section of Holmberg relied upon by the Office discloses a first and a second jobs accessing a same shared physical page when the two jobs access their respective virtual pages. Momentarily ignoring the fact that Holmberg does not disclose or suggest jobs coded with a safe language and a native code,

Holmberg does not disclose the first job requesting a buffer from the second job. Blaukopf does not disclose or suggest the second application requesting a buffer from the first application. Holmberg does not disclose or suggest the second job allocating an analagous address range responsive to the first job requesting a buffer. Blaukopf does not disclose or suggest the first application allocating a second address range responsive to the second application. Neither Holmberg nor Blaukopf disclose or suggest the limitations of claim 34. Therefore, Applicant respectfully requests for the rejection to be withdrawn and claim 34 allowed.

To reject claim 35, the Office again refers to Holmberg's disclosure of jobs accessing a shared physical page via respective virtual pages. The access of the physical page via a virtual page by a job fails to disclose or suggest "the second process **creating a buffer object** and mapping the second address range to a first portion of the one or more physical memory spaces and **communicating a buffer object identifier and a physical memory space identifier** that identifies the first physical memory space portion to the first process; the first process mapping the first address range to the first physical memory space portion as identified by the physical memory space identifier" as recited in claim 35. The Office also refers to Holmberg's disclosure of memory access cycles. **The generation of memory cycles does not disclose or suggest communicating a buffer object identifier and a physical memory space identifier from a second process to a requesting first process. Holmberg never discloses or suggests the first job creating a buffer object, and communicating a buffer object identifier and a physical memory space identifier to the second job.**

Blaukopf also fails to disclose or suggest claim 35. Blaukopf discloses a system thread that is executing the second application creating memory buffers. **If the memory buffers can reasonably be construed as buffer objects, then the memory buffers cannot also be construed as the address ranges. If the memory buffers are construed as the second address range, then Blaukopf fails to disclose or suggest creation of a buffer object.** Even if the memory buffers are construed as the second address range, Blaukopf does not disclose or suggest the system thread mapping the memory buffers to a first portion of one or more physical memory spaces. **In addition to not disclosing creation of a buffer object (unless the Office proposes to erroneously construe the memory buffers as the buffer object and the second**

address range), Blaukopf also does not disclose or suggest the system thread communicating an identifier of a buffer object to the first application and an identifier of a physical memory space to the first application. Neither of the references discloses or suggests all limitations of claim 35, thus failing to establish a *prima facie* case of obviousness. Applicant respectfully requests that the rejection of claim 35 be withdrawn.

To reject claim 39, the Office refers to Holmberg's disclosure of virtual pages and a shared physical page and mimics language from claim 39. None of the limitations of claim 39 are disclosed or suggested in Holmberg or Blaukopf. Holmberg discloses a first job mapping a virtual page to a physical page, and a second job mapping a virtual page to the physical page. As disclosed in Holmberg, **the first job does not request an address range that overlaps with a previously allocated address range. Holmberg also fails to disclose or suggest the second job allocating another address range and mapping portions of the allocated address range as recited in claim 39,** which recites "`mapping [A2', A2' + (A1+S1-A2)] in the second process to a same first portion of the one or more physical memory spaces to which [A2, A1+S1] in the first process is mapped, and mapping [A2'+(A1+S1-A2), A2'+S2] in the second process to a same second portion of the one or more physical memory spaces to which [A1+S1, A2+S2] in the first process is mapped....`" **The Office cannot support the rejection of claim 39 with the actual disclosures of Holmberg and Blaukopf.** The Office has failed to establish a prima facie case of obviousness against claim 30. Accordingly, Applicant respectfully requests the rejection be withdrawn.

To reject claim 40, the Office refers to Holmberg's disclosure of a shared page table and a private page table. **Regardless of whether Holmberg's tables comprise a list of address ranges, Holmberg fails to disclose or suggest a list that allows detection of at least one of overlapping address ranges and nested address ranges.** Again, the references do not disclose or suggest all limitations of the claim. Applicant requests that the rejection be withdrawn.

Blaukopf and Holmberg, whether standing alone or in combination, fail to disclose or suggest each and every limitation of the claims. Hence, the Office has failed to establish a prima facie case of obviousness. Applicant requests that the rejection of claims 33 – 41 be withdrawn.

Failure to show motivation or suggestion to modify Blaukopf with Holmberg without hindsight-based obviousness analysis

The combination or modification of references for an obviousness rejection must be supported with "a showing of a suggestion or motivation to modify the teachings." In re Kotzab, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir 2000). "The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." In re Kotzab, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir 2000), *citing* In re Dembiczak, 175 F.3d 994 at 999, 50 U.S.P.Q.2d 1614 at 1617 (Fed. Cir. 1999). Rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references is "the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis." In re Lee, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002), *quoting* In re Dance, 160 F.3d 1339, 1343, 48 U.S.P.Q.2d 1635, 1637 (Fed. Cir. 1998).

The Office contends that it would have been obvious to modify Blaukopf with Holmberg to map address ranges of the first and second applications to a same shared physical memory space. The Office makes this leap to Applicant's claim language with the support of hindsight. There is no motivation or suggestion to modify Holmberg to disclose the first and the second jobs as being coded in a safe language and in a native code, respectively. In addition, there is no motivation or suggestion to modify Blaukopf to maintain a first stream buffer in a virtual page for a first application, a second analogous stream buffer in a second virtual page for a second application, and to map the buffers to a same shared physical page. These significant modifications to Blaukopf and/or Holmberg lack any support from the record. The Office contends that a person of ordinary skill in the art would have been motivated to make these substantial modifications because the modification would make more efficient use of buffer space and reduce the probability that a data packet will be delayed due to congestion of the buffer space. *See* Office Action page 3. The Office has not shown any support for this contention. The Office also contends that one of ordinary skill in the art would be motivated to make the modifications to avoid the need to copy a speculatively executed job's data from the temporary storage into a shared memory, thus reducing additional overhead that slows information processing rate. *See* Office Action page 3. However, Holmberg allegedly achieves

this without Blaukopf by redefining shared physical pages to include a private physical page in place of a second physical page if no collision occurs between the first and second jobs. See col. 5, lines 11 – 17. In addition, Blaukopf does not disclose copying speculative data from a temporary storage to a shared memory. There can be no motivation to modify the reference to achieve something that is not even disclosed in the reference. Applicant respectfully submits that the Office has failed to satisfy the requirement of a showing for motivation or suggestion to modify the references to support the obviousness rejection. Therefore, Applicant requests that the rejection be withdrawn.

The Office has not shown a motivation or suggestion as supported by the record to modify the references as done by the Office. Applicant requests that the rejection of claims 33 – 41 be withdrawn.

Rejections with Blaukopf in view of Chaney and further in view of Holmberg

Claims 26-32, 42-46, and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blaukopf et al., U.S. Patent Application Publication 2002/0095521, in view of Chaney et al., EP Patent Application No. EP 0 841 617 A2, further in view of Holmberg et al., U.S. Patent No. 6,345,351. Applicant traverses these rejections at least because 1) the references do not disclose or suggest all limitations of the claims and 2) the Office has failed to support the obviousness rejections with a showing of a suggestion or motivation to modify the references as done by the Office.

Independent claims

The Office rejects independent claims 26, 42, and 47 with reference to Chaney's disclosure of a single buffer space. Chaney's disclosure of a single buffer space for requests and responses does not disclose or suggest a first process allocating a first address range and a second process allocating a second address range. **Allocation of a single buffer space does not disclose or suggest a first and a second processes allocating a first and a second address ranges** as recited in claim 26, and similarly recited in claims 42 and 47.

The Office also rejects these independent claims with the same modification to Blaukopf with Holmberg as done to reject claim 33 to achieve Applicant's claims. As stated above, the

Office has not shown a suggestion or motivation for such a combination or modification that is supported by the evidence of record. Holmberg, Blaukopf, and Chaney, standing alone or in combination, do not disclose or suggest a first process mapping an address range allocated in the first process to a physical memory space shared with a second process that maps a second address range allocated in the second process to the shared physical memory space.

Claim 42 also recites "a first language code executable to **allocate an address range in a first environment**, which executes the first language code, **responsive to a request for a buffer**,... a second language code executable to request the buffer and allocate an address range in a second environment, which executes the second language code, and executable to **map the second environment address range to the physical memory space responsive to indication of the physical memory space from the first language code**...." As stated above with regard to dependent claim 34, Holmberg and Blaukopf fail to disclose or suggest code that allocates an address range in a first environment ***responsive*** to a request for a buffer. The references also fail to disclose or suggest code executable to map a second environment address range to a physical memory space ***responsive*** to indication of the physical memory space.

None of the art of record, standing alone or in combination, discloses or suggests any of independent claims 26, 42, and 47. Applicant requests that the rejections be withdrawn since they have no support.

Dependent Claims

Dependent claim 29 was rejected under the same rationale as claim 34. As stated above, Holmberg and Blaukopf do not disclose or suggest a second process allocating a second address range responsive to a first process requesting a direct buffer to a first address range allocated in the first process.

Dependent claim 30 was rejected under the same rationale as claim 35. For the same reasons stated above with respect to claim 35, Holmberg and Blaukopf do not disclose or suggest a second process causing generation of a buffer object identifier and communicating the buffer object identifier and a shared physical memory space identifier to a first process.

Dependent claims 32 and 49 were rejected under the same rationale as claim 40. For the same reasons stated above with respect to claim 40, Holmberg and Blaukopf do not disclose or suggest an encoding that indicates at least one of overlapping address ranges and nested address ranges.

Obviousness-type Double Patenting Rejections

The Office has rejected claims 1 – 25 for obviousness-type double patenting. Claims 1 – 25 are not currently pending because they were cancelled in the previous response.

Conclusion

In summary, claims 26 – 49 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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